

VISUAL BASIC/C# PROGRAMMING (330)

REGIONAL – 2018

Production Portion:

Program 1: Photo Gallery _____ (415 points)

TOTAL POINTS _____ (***415 points***)

Failure to adhere to any of the following rules will result in disqualification:

- 1. Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.**
- 2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.**
- 3. Electronic devices will be monitored according to ACT standards.**

No more than ten (10) minutes orientation
No more than ninety (90) minutes testing time
No more than ten (10) minutes wrap-up

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Photo Gallery

Photo gallery applications are included on all modern operating systems, and thus are commonly overlooked. In this exercise, you will create a Visual Basic or C# Windows Form Application that handles the functionality commonly associated with this sort of generic application. It will be capable of loading in a directory of images and will allow traversal through them. All images will be 640x640 for simplicity.

Requirements:

1. You must create a VB/C# Windows Forms application named VB_330_ContestantNumber, where ContestantNumber is your BPA assigned contestant number (including dashes). For example, VB_330_01_2345_6789.
2. Your contestant number must appear as a comment at the top of the main source code file.
3. Application on Exit button press must ask for confirmation to close, with the Title of the confirmation box being “Confirm” and the text being “Are you sure you wish to exit the photo gallery?”
 - a. Exit button must be named “exitButton”
4. The main form must not have minimize, maximize, or close buttons in the Form Handle.
5. Pressing the Load Button must show a FolderBrowserDialog that allows the user to select a folder. Once the folder is selected, all pictures in the folder must be loaded and the title of the form should be changed to “Photo Gallery – {folderpath}”.
6. If a folder has not been loaded, the right and left buttons must be disabled. When a picture is loaded, these buttons must be re-enabled.
 - a. These must be named “leftButton” and “rightButton”
7. When a folder is loaded, the first image must be loaded into the picture box control “galleryBox”
8. The left button must load the image prior to the currently loaded image. If the first image is already loaded, then nothing is done.
9. The right button must load the image after the currently loaded image. If the last image is already loaded, then nothing is done.
10. An indicator of how many photos should be between the right and left buttons in the form of “{currentIndex} / {numberOfPhotos}”. If there are no photos loaded this should display “0/0”. This must be automatically updated when either left or right buttons are pressed.

Sample Pictures:



Figure 1: The cats directory, loaded in. Note that the title of the form has changed name to C:\Users\SBatzer\Desktop\cats

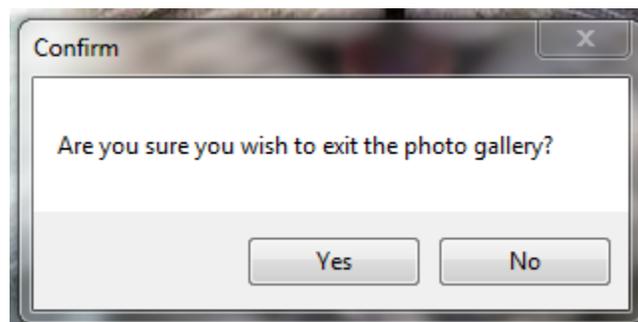


Figure 2: The confirmation window. This should be opened when Exit is pressed. If “Yes” is clicked, the application should close, otherwise, return to the main form.

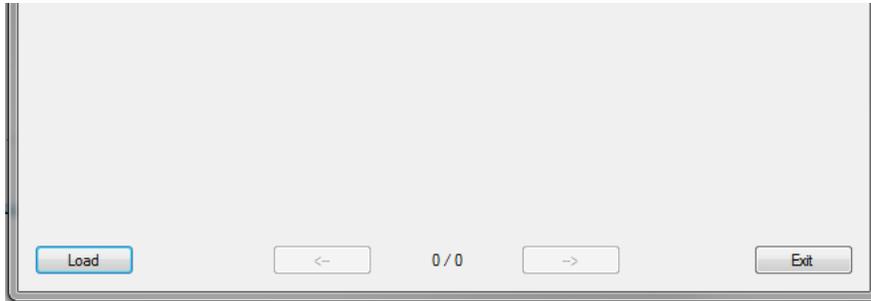


Figure 3: On form load, there should be no directory loaded. Thus, the left and right buttons are disabled. These must be enabled once a directory is loaded. Note that the photo indicator is set to 0/0.

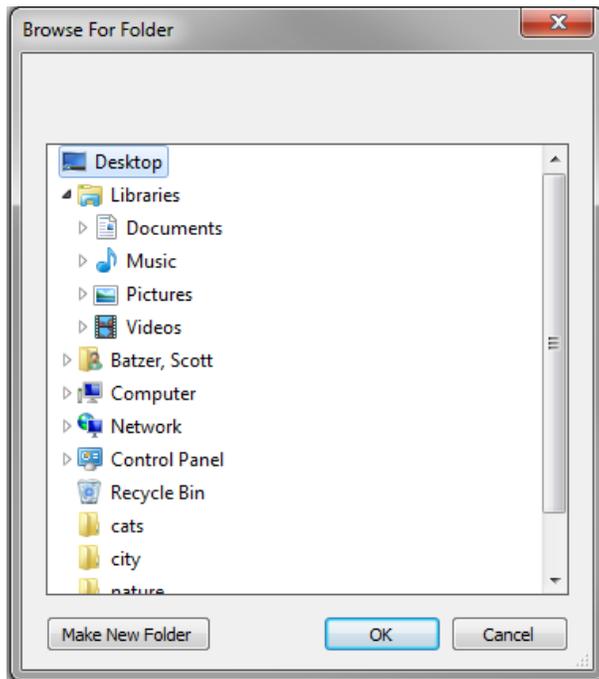


Figure 4: The Directory loading form. Note that this is populated using the FolderBrowserDialog class.

You will have ninety (90) minutes to complete your work.

Your name and/or school name should *not* appear on any work you submit for grading.

Save a copy your entire solution/project to the flash drive provided. You must submit your entire solution/project so that the graders may open your project to review the source code and/or build and execute your solution/project. **Submissions that do not contain source code will not be graded.**

Development Standards

- Standard name prefixes must be utilized for variables.
- All subroutines, functions, and methods must be documented with comments explaining the purpose of the method, the input parameters (if any), and the output (if any).

Your application will be graded on the following criteria:

Solution and Project

- The project is present on the flash drive _____ 10 points
- The project is named according to the naming conventions _____ 10 points

Program Execution

- Code copied to flash drive and program runs from flash drive _____ 20 points

If the program does not execute, then the remaining items in this section receive a score of zero.

- The program contains an Exit button that asks for user confirmation. _____ 25 points
- The Exit button is named “exitButton”. _____ 20 points
- The main form does not have minimize, maximize, or close buttons in the Form Handle. _____ 25 points
- Pressing the Load Button shows a FolderBrowserDialog that allows the user to select a folder. _____ 25 points
- Loading a folder change form title to “Photo Gallery – {folderpath}”. _____ 25 points
- If a folder has not been loaded, the right and left buttons are disabled. _____ 25 points
- When a picture is loaded, the right and left buttons are re-enabled. _____ 25 points
- These buttons are named “leftButton” and “rightButton”. _____ 50 points
- When a folder is loaded, the first image is loaded into the picture box control “galleryBox”. _____ 25points
- The left button loads the image prior to the currently loaded image. _____ 25 points
- The right button loads the image after the currently loaded image. _____ 25 points
- Bounds checking on left and right buttons is handled properly. _____ 25 points
- Photo index indicator is displayed and updated properly. _____ 25 points

Source Code Review

- Code is commented at the top, for each function, and as needed. _____ 15 points
- Code uses reasonable and consistent variable naming conventions. _____ 15 points

Total Points: 415 points